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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/523,995	02/09/2005	Simon Champ	265078US0PCT	2854

22850 7590 03/31/2006

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EXAMINER

CORDRAY, DENNIS R

ART UNIT	PAPER NUMBER
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1731

DATE MAILED: 03/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/523,995	CHAMP ET AL.	
	Examiner	Art Unit	
	Dennis Cordray	1731	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>2/9/2005</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weisgerber (2961366) or Mitsubishi Paper Mills (JP 08146555 A, English abstract used) in view of Pfohl et al (4774285) or Niessner et al (6159340) and further in view of Auhorn et al (6083348).

Weisgerber discloses a method for internal sizing of paper comprising adding to the pulp an alkyl ketene dimer and polyvinylamine (col 1, lines 33-42, col 3, lines 34-38). Weisgerber discloses a greater degree of sizing is achieved when the amount of polyvinylamine used is from 0.001 to 0.2 percent based on the weight of the pulp (col 3, lines 26-33).

Mistubishi discloses an internal sizing method comprising adding to the pulp an alkyl ketene dimer and mixture of at least two kinds of N-vinylformamide-vinylamine copolymer having different base-hydrolysis ratios, but containing at least 50 mol percent of vinylamine units (at least 50% hydrolyzed). The polymer is added in the amount of at least 0.3 percent based on the weight of the pulp (Abstract).

Weisgerber and Mitsubishi do not disclose the K value of the polymer.

Pfohl et al discloses the addition of a copolymer comprising N-vinylformamide, which has been 30-100 mol percent hydrolyzed to vinylamine, to papermaking stock to increase dry and wet strength of the paper formed. The polymer is added in an amount of 0.1 to 5% by weight of the dry fibers (Abstract, col 1, lines 31-46; col 3, lines 4-8). The copolymers have a Fikentscher K value from 50 to 250, determined at 25 °C in a 5% aqueous sodium chloride solution at a polymer concentration of 0.5% by weight (col 3, lines 37-46; col 3, line 70 to col 4, line 4).

Niessner et al discloses addition of partially hydrolyzed N-vinylformalide polymers to papermaking stock in an amount of 0.01 to 5 percent by weight of the stock, resulting in an increased dry strength. Niessner et al discloses K values from 8 to 300 for the hydrolyzed polymers, determined at 25 °C in 5% aqueous sodium chloride at a polymer concentration of 0.5% by weight (col 5, lines 1-8, 46-49 and 63-67).

Auhorn et al discloses that polymers containing vinylamine units can simultaneously serve in papermaking processes as fixing agents, drainage aids, retention aids as well as wet and dry strength enhancers. Auhorn recites as an example that cationic fixing agents are used for simultaneously purposes of eliminating interfering substances which interfere with the efficiency of retention aids, wet and dry strength agents and engine sizes (col 2, lines 34-48).

The art of Weisgerber, Mitsubishi Paper Mills, Pfohl et al, Niessner et al, Auhorn et al and the instant invention are analogous as pertaining to uses of vinylamine containing polymers used to enhance papermaking processes. It would have been obvious to one of ordinary skill in the art to add vinylamine containing polymers having

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the claimed K values to the papermaking stock of Weisgerber or Mitsubishi Paper Mills in view of Pfohl et al or Niessner et al and further in view of Auhorn et al to enhance the wet and dry strength in addition to improving the sizing of the paper formed.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure [Brunnmueller et al (4421602), Pfohl et al (4889497), Auhorn et al (5145559), de Clarcq et al (5498648)]. They pertain to other papermaking processes that use alkyl ketene dimmers and/or vinylamine containing polymers.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dennis Cordray whose telephone number is 571-272-8244. The examiner can normally be reached on M - F, 7:30 -4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


DRC


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